

# इंटरनेट

# मानक

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IS 13579 (1992): Transport trailers - Method of test [TED  
22: Transport Tractors and Trailers]



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“Knowledge is such a treasure which cannot be stolen”



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भारतीय मानक

परिवहन ट्रेलर — परीक्षण विधि

*Indian Standard*

TRANSPORT TRAILERS — METHODS OF TEST

UDC 621.868.238.2/6 : 620.1

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**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

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**Price Group 2**

## FOREWORD

This Indian Standard was adopted by the Bureau of Indian Standards, after the draft finalized by the Transport Tractors and Trailers Sectional Committee had been approved by the Transport Engineering Division Council.

With the progressive development of trailer industry in India, it has been felt necessary to evolve a code which would lay down standards to assess suitability of trailer in its intended role.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values ( *revised* )'.

# Indian Standard

## TRANSPORT TRAILERS — METHODS OF TEST

### 1 SCOPE

This standard specifies the methods of performance testing of transport trailers intended for general service use.

### 2 REFERENCES

**2.1** The following Indian Standards are necessary adjuncts to this standard.

| <i>IS No.</i>            | <i>Title</i>                                                                                                            |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|
| 7774<br>(Part 1) : 1975  | Glossary of terms relating to transport tractors and trailers : Part 1 Basic terms                                      |
| 7774<br>(Part 2) : 1975  | Glossary of terms relating to transport tractors and trailers : Part 2 Dimensions and weights                           |
| 11852<br>(Part 3) : 1987 | Recommendations for brakes and braking systems for automotive vehicles : Part 3 Performance requirements and evaluation |

### 3 TERMINOLOGY

**3.1** For the purpose of this standard, the terms and definitions given in IS 7774 (Parts 1 and 2) : 1975 and along with the following shall apply.

#### 3.1.1 Articulation Height for Single Axle

It is the maximum lift of wheels on one end of the axle to the other end of the same tilted axle without affecting the ease of operation/functions of the various components/controls.

#### 3.1.2 Articulation Height for Multi Axle

It is the maximum height to which any two adjacent diagonally opposite wheels of an axle group of any trailer be subjected to lift without affecting the ease of operation/functions of various components/controls.

#### 3.1.3 Near Side

Near side of a tractor-trailer combination is the side which is nearer to the platform kerb or pavement where a tractor-trailer combination is usually parked for short periods on highways in the direction of move. The near side is the one towards the left of the driver when he is in the driving seat.

#### 3.1.4 Off Side

Off side of a trailer is the side opposite to the near side.

#### 3.1.5 Outer Turning Circle of Tractor-Trailer Combination

It is the circle circumscribed by the centre of contact of the outer-most wheel with the ground in case of single mounting and outer track centre in case of dual mounting ( *see* Fig. 1 ).

#### 3.1.6 Inner Turning Circle of Tractor-Trailer Combination

It is the circle circumscribed by centre of contact of inner wheel with the ground in case of single mounting and inner track centre in case of dual mounting ( *see* Fig. 1 ).

#### 3.1.7 Outer Tractor-Trailer Combination Clearance Circle

It is the circle circumscribed by outer-most point of the tractor trailer combination ( *see* Fig. 2 ).

#### 3.1.8 Inner Tractor-Trailer Combination Clearance Circle

It is the circle circumscribed by the inner-most point of the tractor-trailer combination ( *see* Fig. 2 ).

#### 3.1.9 Service Brake

It is the brake for retarding, stopping and/or controlling the tractor-trailer combination while the combination is in motion.

#### 3.1.10 Braking Distance

It is the distance travelled between the point of retardation by the brakes on a level ground and the point at which the trailer comes to rest.

#### 3.1.11 Parking Brake

Parking brake is used for parking or holding the trailer or the tractor-trailer combination in unladen/laden condition either on a level ground or on a specified gradient.

#### 3.1.12 Standard Performance Trials

A set of standard trials which will indicate the required performance characteristics of the tractor-trailer combination but will not include reliability and wear and tear properties.

#### 3.1.13 Cross Country

It is defined as a natural/virgin terrain other than metal roads and may comprise bullock cart or animal tracks, slushy or sandy terrains such as river bed cross and level or undulated boulder sections or hilly terrain with gradients.

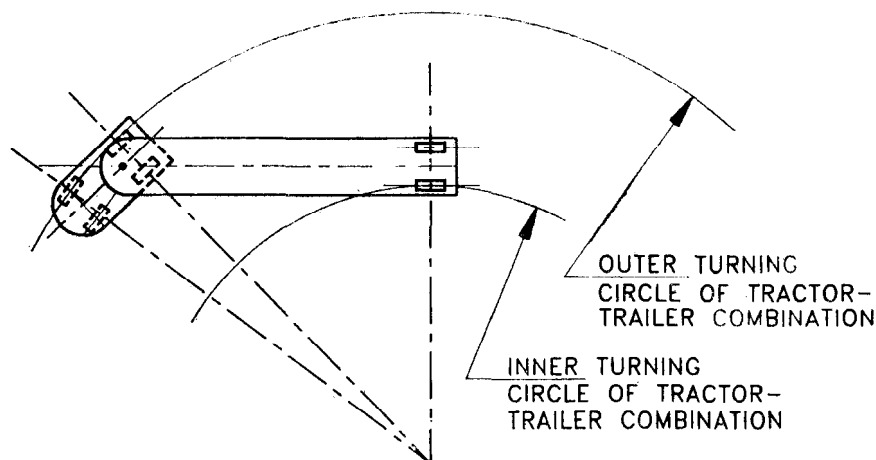


FIG. 1 DEFINITIONS OF OUTER AND INNER TURNING CIRCLE OF TRACTOR-TRAILER COMBINATION

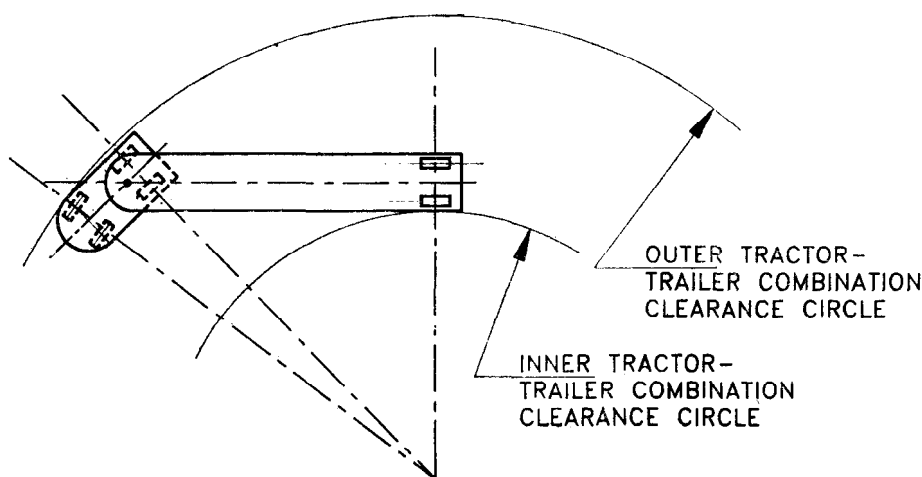


FIG. 2 DEFINITIONS OF OUTER AND INNER TRACTOR-TRAILER COMBINATION CLEARANCE CIRCLE

## 4 PERFORMANCE TESTS

### 4.1 General Performance Tests

#### 4.1.1 Initial Examination

Any new trailer on receipt from the firm shall be inspected to ascertain whether the tractor-trailer combination is in conformity with the specifications and drawings of the approved prototype supplied by the makers.

#### 4.1.2 Loading and Weighing

The sample trailer shall be weighed in laden and unladen conditions to check axle load distributions. In laden condition, the trailers shall be loaded with the specified load and locations as per the specification.

#### 4.1.3 Road Test on Selected Track on Public Road

4.1.3.1 A suitable test track consisting of different types of road surfaces like tar, tarmac and gravel, representing the general public road/high way conditions shall be selected for this test.

4.1.3.2 The track shall be of at least 15 km run.

4.1.3.3 The towing vehicle with the trailer in combination shall be driven in unladen/laden condition at specified restricted speed and maximum controllable speed.

4.1.3.4 General performance of the trailer during this test shall be recorded.

#### 4.1.4 Articulation Test

4.1.4.1 The test shall be conducted on a plain levelled hard ground.

4.1.4.2 The test shall be conducted in the fully laden condition of the trailer with specified tyre pressure.

4.1.4.3 Articulation height of each of the consecutive pairs of wheels shall be measured.

4.1.4.4 Observations regarding the fouling points, if any, shall be recorded.

### 4.1.5 Gradeability

The gradeability of a tractor-trailer combination is checked in fully laden condition. When prime mover is detached, the trailer shall be able to hold with parking brake at the specified gradient.

### 4.1.6 Measurement of Turning Circle

**4.1.6.1** Turning circle diameter of the tractor-trailer combination shall be measured on a plain ground.

**4.1.6.2** Marking can be made on the ground, while the tractor-trailer combination is moved in the lowest possible speed at different types of drive, either by means of spray water or by means of a pointer.

**4.1.6.3** Both minimum outer and corresponding inner circle shall be checked.

**4.1.6.4** Minimum outer tractor-trailer combination clearance circle and the corresponding inner tractor-trailer combination clearance circle shall be checked.

### 4.1.7 Brake Performance Tests

The brake performance shall be checked in accordance with IS 11852 ( Part 3 ) : 1987.

### 4.1.8 Lighting Equipment Tests

All the electrical fittings like tractor-trailer couplers, brake lamps, indicator lamps, tail lamps, etc, shall be checked during day as well as night for intended functions.

## 4.2 Optional Performance Tests

### 4.2.1 Road Tests on Cross Country Track

**4.2.1.1** The test track selected for this test shall be of rough, uneven boulder and hilly terrain.

**4.2.1.2** It is preferable if the track includes crossing of river beds and slushy terrain and shall be of at least 15 km run.

**4.2.1.3** General performance of the trailer shall be recorded during this test.

### 4.2.2 Endurance Trials

**4.2.2.1** After a trailer has been tested for assessment of its performance under various tests/trials as explained above, it may be subjected to endurance trials. The aim of these trials is to observe the sturdiness and capability of the trailers, its components assemblies and parts and to record any defects, maintenance difficulties etc, that would be normally experienced during prolonged service under actual operating conditions and which could not be brought out during standard performance trials.

**4.2.2.2** The trailer, which is selected for endurance trials shall be kept under observation during the trial period. The required kilometerage for completion of endurance trials shall depend upon the type of trailer and its intended role. During endurance trials, the trailers shall be used in their intended role without any misuse or abuse of any part or any assembly/component. The trailer shall be run in highway/cross country/kacha roads as recommended for the trailer use.

**4.2.2.3** After completion of endurance trials, various major assemblies/sub-assemblies shall be stripped open to check the condition of various components and wear rates of various moving parts.

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## BUREAU OF INDIAN STANDARDS

### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002  
Telephones : 331 01 31, 331 13 75

Telegrams : Manaksanstha  
( Common to all Offices )

### Regional Offices:

Telephone

Central : Manak Bhavan, 9 Bahadur Shah Zafar Marg  
NEW DELHI 110002

{ 331 01 31  
331 13 75

Eastern : 1/14 C. I. T. Scheme VII M, V. I. P. Road, Maniktola  
CALCUTTA 700054

{ 37 84 99, 37 85 61,  
37 86 26, 37 86 62

Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036

{ 53 38 43, 53 16 40,  
53 23 84

Southern : C. I. T. Campus, IV Cross Road, MADRAS 600113

{ 235 02 16, 235 04 42,  
235 15 19, 235 23 15

Western : Manakalaya, E9 MIDC, Marol, Andheri ( East )  
BOMBAY 400093

{ 632 92 95, 632 78 58,  
632 78 91, 632 78 92

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